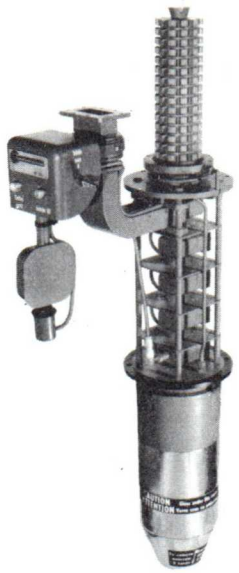
TV 2012 KLYSTRON



TV 2012 is a very high power sealed off klystron amplifier able to deliver a 5 MW peak power in "S" band.

It is specially designed to be used on particle accelerators.

It includes five resonators no tunable by the customer. The R.F. input is made on a "N" type coaxial plug and the output through one ceramic window set on a waveguide.

Each tube is tuned at the factory at a specified central frequency in the range 2700-3100 MHz.

Beam focalization is insured by a TV 19009 focus coil external to the tube.

The tube body and the window are cooled by a water flow and the collector by vaporization of water.

TV 2012 high frequency amplifier, of very large peak and average power, has the following advantages :

- high gain : 55 dB
- high efficiency (more than 40%) which enables a saving on cost and volume of the feeding devices.
- high operating safety due the Vapotron * cooling technique of the collector.
- long life, the tube being fitted with an active getter.

GENERAL CHARACTERISTICS

Electrical

Type of cathode	indirectly heated, oxyde coated, unipotential
Heater voltage	25 V ± 10% (3)
Heater current, approximately	25 A
Heating time, minimum	15 mm

Mechanical

Envelope	ceramic metal with glass cathode insulator
R.F input	UG 22 D/U plug (1)
R.F output	ceramic window on standard RG 48/U waveguide
Active getter input	UG 496/U plug (2)
Mounting position	vertical, cathode-end down
Net weight approximately	60 kg
Dimensions	1300 mm height

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* CFTH patented trade mark

(1) to be used in conjunction with UG 21 D/U connector.

(2) to be used in conjunction with UG 59 D/U connector.

(3) the exact heating voltage is indicated on the testing sheet of each tube. This voltage is to be observed within ± 5 %.

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Type of cooling :

body and windows	water flow	same circuit
collector	water vaporization	same circuit

MAXIMUM RATINGS

(non-simultaneous)

Load V S W R	1,5
Beam voltage	145 kV
Average applied power	35 kW
Collector dissipation	35 kW
Heater surge current	50 A
Voltage pulse duration	12 µsec. (1)
Absolute pressure on output windows	4 kg/cm2 (56 PSI)
Duty cycle	.0024
Cooling water inlet temperature	50°C

TYPICAL OPERATIONS

(Max. V S W R 1.1)

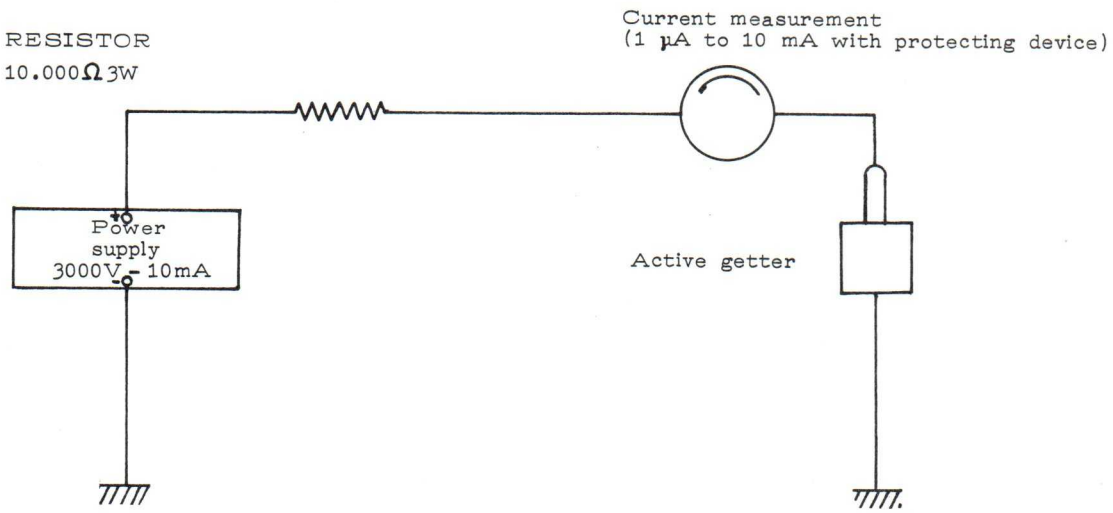
	Example
Beam voltage	130 kV
Beam current	95 A
Peak output power	5 MW
Average output power	10 kW
Gain	55 dB
Bandwidth at - 1 dB	15 Mc
Efficiency	40 %
Pulse duration	5 µsec.
Cooling water flow	3 l/mn
Cooling water inlet pressure	1 kg/cm2

(1) May be increased upon request.

TUBE ACCESSORIES

Focus coil	TV 19009
Heater-cathode connector	TV 19201
Boiler	TV 19300
Packaging	299 GB 21
Vapodyne System *	see Data TE 019

ACTIVE GETTER FEEDING CIRCUIT



The active getter operation requires the use of a TV 19.500 permanent magnet supplied with TV 19.009 Focus Coil.

* C F T H patented trade mark.

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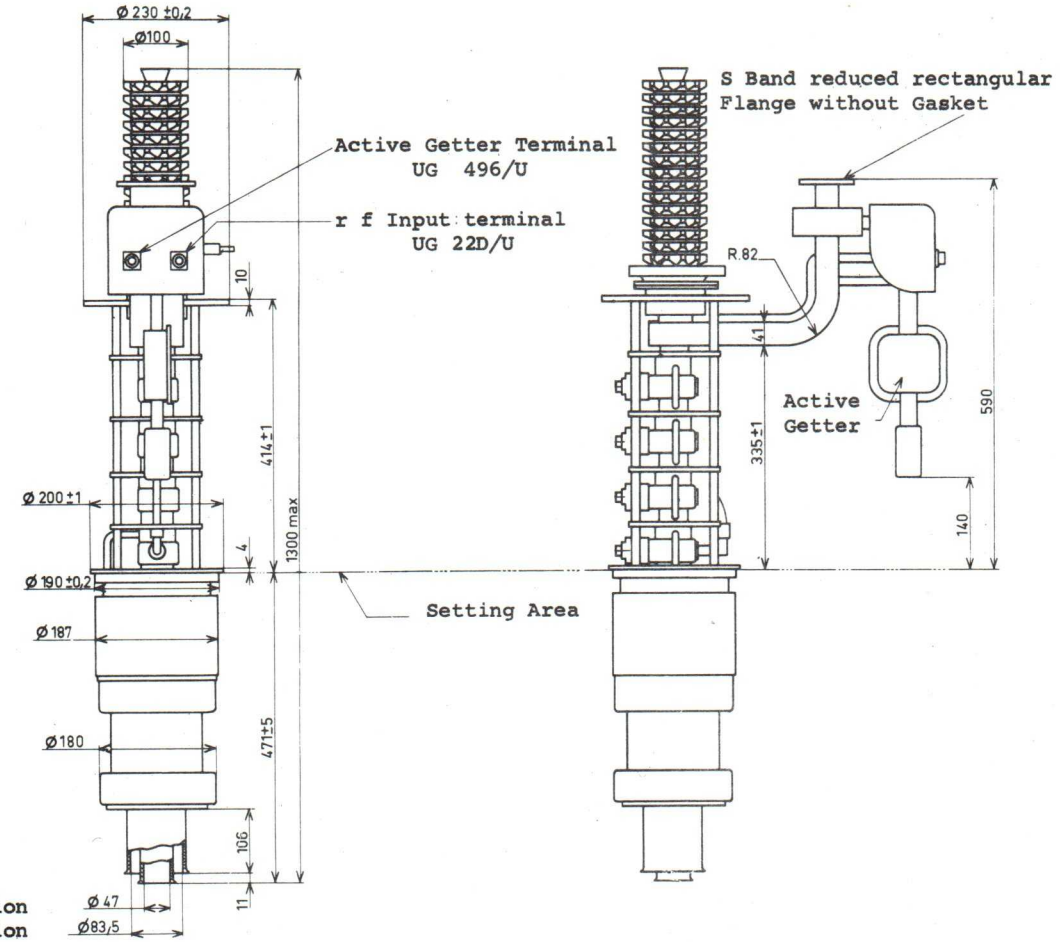
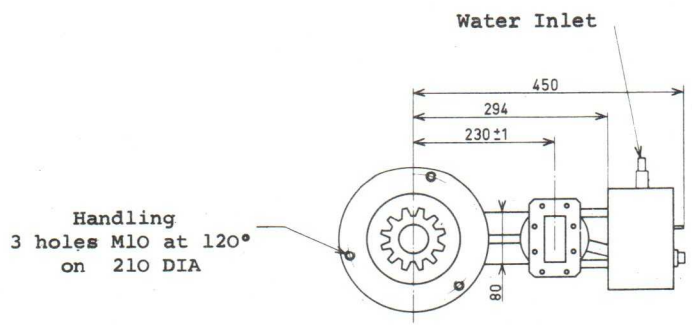
OULTINE DRAWINGS





All dimensions in mm